Challenges Faced by Midwives in the Implementation of Facility-Based Maternal Death Reviews in Malawi.

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Abstract

Background:

Midwives are the key health care personnel involved in facility-based maternal death reviews in Malawi. Maternal death reviews provide in-depth understanding of causes of maternal deaths. Midwives are well positioned to provide positive and negative stories surrounding women's pregnancy experiences which could provide a clear understanding of predisposing factors and potential solutions to maternal mortality. Despite midwives' participation as members of the maternal death review team, maternal mortality continues to occur. Understanding the potential predisposing factors behind each death is key in devising evidence-based interventions to minimize the occurrence of maternal deaths. This study was therefore, conducted to explore and describe the challenges faced by midwives as they participate in maternal death reviews in the context of the healthcare system in Malawi.

Methods:

Forty midwives participated in data collection at six district hospitals. Twelve Registered Nurse Midwives in senior positions (6 District Nursing Officers & 6 Matrons) described challenges faced by midwives in the implementation of facility-based maternal death review through face-to-face interviews, two from each of the six selected district hospitals. Twenty-eight midwives: 12 Registered Nurse Midwives and 16 Nurse Midwife Technicians participated in five focus group discussions, 2 and 3 respectively explored possible solutions and recommendations to address the identified challenges. All the participants had a minimum of two years' experience participating in maternal death reviews. Data were analysed manually using thematic content procedure.

Results:

Challenges identified were: knowledge and skill gaps; leadership gap and lack of accountability; lack of institutional political will and inconsistency in conducting FBMDR, impeding midwives' effective contribution to the implementation of maternal death review. The possible solutions and recommendations that emerged were need-based knowledge and skills updates, supportive leadership, effective and efficient interdisciplinary work ethics, and sustained availability of material and human resources.

Conclusion:

Midwives have the highest potential to contribute to the reduction of maternal deaths. Practice development strategies are required to improve their practice in all the areas they are challenged with.

Background

Sub-Saharan Africa and South Asia combined, account for 86% of all the estimated global maternal deaths [1]. Malawi is one of the countries in the world that did not meet the Millennium Development Goal

5 target of reducing maternal deaths by 75% by 2015 despite a significant increase in antenatal care attendance and institutional deliveries by skilled healthcare workers [2]. In 2016, Malawi's mortality ratio (MMR), stood at 439/100000 live births, having decreased from 675/10,000 in 2010 [3]. The global Sustainable Development Goal 3 target is calling for governments to reduce maternal death to 70/100,000 live births by 2030 and neonatal death of 12/1000 live births. Skilled birth attendants play a critical role in making pregnancy safer and saving lives of women and newborns [4]. According to the World Health Organisation [5], the following are factors contributing to the high vulnerability of maternal morbidity and mortality globally: i) poor quality of maternal healthcare services as a result of weak healthcare systems with: ii) shortage of workforce; iii) poor service delivery in part due to inadequate human & material resources, coupled with inadequate knowledge, skills and lack of competencies; iv) lack of access to essential health supplies, equipment inadequate financing, leading to low purchasing power; v) inefficient leadership and governance and vi) inadequate information for making decisions. The effectiveness of the healthcare system is dependent on strengthening these six health service building blocks [5]. Nursing and midwifery workforce, as frontline workers, and members of the multidisciplinary team, have a huge role to play in strengthening the global health system through provision of sustained quality maternal health services [5]. The weak healthcare system in Malawi needs urgent strategies to strengthen it to provide the expected quality maternal health services and reduce the mortality rates [6]. The World Health Organization introduced the Safe Motherhood programme to accelerate the reduction of existing high maternal and neonatal mortality in Low Income Countries (LMIC) [7]. Despite this initiative, more than 15years down the line, women continue to die from direct and indirect preventable pregnancy related causes globally which could be averted with cost-effective measures. Only if underlying causes are singled out using evidence-based means, then will appropriate solutions be identified and implemented to reduce the mortality rates [7]. Statistics on maternal deaths tell only part of the story, in particular, they tell nothing about the faces beyond the numbers, the individual stories of suffering and the real underlying reasons why particular women continue to die in a world where knowledge and resources are available and obtainable. Understanding why women die and what could be done to prevent or avoid these deaths is crucial in saving women's lives [7].

Each maternal death or case of life complication has a story to tell and can provide indications on practical ways of addressing the problem [7]. Global experiences in the use of such approaches have led to the successful implementation of Maternal Death Review (MDR) at various levels of the healthcare delivery system, including: Individual facility and national level, influencing health professionals, healthcare planners and managers working in maternal and newborn health, who strive to provide improved quality of care outcomes [7]. Malawi is one of the countries which adopted this approach and implemented the MDR since 2005 to provide an in-depth investigation into causes of and circumstances surrounding maternal deaths occurring in health facilities in the country [8]. The mechanisms of audits and reviews are widely recommended as interventions to deepen an understanding of the prevalence and incidence of possible causes of maternal mortality [7] Audits and reviews enable the development of recommended actions for improving the quality of maternal healthcare, which could be key to efforts in the attainment of the Sustainable Development Goal 3.1 by 2030, although there is little robust evidence

to support this discourse [9, 10]. However, a study in Malawi on difficulties in conducting MDR found that healthcare providers were facing many challenges at different levels of implementing MDR including: lack of knowledge, skills, shortages of staff and material resources [8]. In Malawi, midwives have been participating in the implementation of MDR as individual practitioners and as members of multidisciplinary teams at all levels of the healthcare delivery system but the challenges they face in their contribution to the implementation of maternal death review remains obscure [11, 12]. This study was conducted to illuminate these challenges.

The results of this study and other studies have however, revealed several challenges midwives face while contributing to the implementation of the MDR, which include: shortage of staff, lack of resources, inadequate knowledge and skills, effective leadership gap and lack of accountability, lack of institutional political will, multidisciplinary team collaboration and inabilities to consistently conduct the review. Midwives' capabilities to mitigate these challenges, therefore, require consented efforts and support at all levels of the healthcare delivery system, from policy level to program planners, regulatory body, academia, managers, care providers and the community. The MDRs provide a timeous opportunity for midwives, hospital health management and other multidisciplinary team members to learn from circumstances leading to maternal deaths, suggest possible solutions to avert potential future maternal deaths, monitor implementation of recommendations and promote accountability for outcomes. When the results of maternal and perinatal death surveillance and review are acted upon by all concerned parties, the recommendations made from reviews can lead to sustained quality improvement of maternal healthcare services and consequently prevent future maternal mortality ratios [13]. In many low income countries where MDRs are being practiced, findings have shown: lack of knowledge among facility staff; inadequate in-service training, increased workload, limited knowledge of health policies and difficulties following the procurement act among midwives [14, 15] The challenges, as with many healthcare system interventions, is to find a way to provide catalytic assistance and strengthen the capacity for Maternal Death Surveillance and Response (MDSR) which is embedded in the healthcare system [8, 14, 16]. In Malawi, no studies have been conducted before to explore and describe the challenges faced by midwives in the implementation of Facility-based Maternal Death Review (FBMDR) in district hospitals. This paper, therefore, aimed to describe the four major challenges faced by district-based midwives in their contribution in the implementation of FBMDR, these include: i) knowledge and skill gaps, ii) leadership gap and lack of accountability, iii) lack of institutional political will and iv) inconsistencies in conducting MDRs and the proposed possible solutions to address the identified challenges.

Methodology

A qualitative exploratory descriptive design was used to explore and describe the experiences and views of the midwives working at the district hospitals regarding (i) challenges they face in their contribution to the implementation of facility-based maternal death review and ii) possible solutions and facilitators to enhance practice development of midwives in the implementation of facility-based MDR in the context of the healthcare delivery system in Malawi. Focus group discussions (FGD) and individual face to face in-depth interviews were conducted with Registered Nurse Midwives and Nurse Midwife Technicians who

participate in the implementation of facility-based maternal death reviews (FBMDR) in district hospitals in Malawi. Six district hospitals were selected for the study, three from each rural and urban area.

Sampling

A non-probability purposive sampling technique was used to select the participants from the six sampled district hospitals. The researchers used judgment and a well-defined criterion to select participants who were knowledgeable of the phenomenon of interest under study and were capable of freely articulating their personal views and experiences using their own words [17]. Eligible participants were identified from the midwives' staff data list with the inputs from the Matrons at each of the selected hospitals. The initial sample consisted of thirty participants, but this number was increased to forty at the end of the study. The total number was decided by the scope of the study, the complexity of the information to be collected and the data collection methods. There is no exact way of determining sample size in a qualitative study, but there is agreement amongst authors that qualitative researchers can use the scope of the study, the nature of the topic, the method of data collection, the usefulness of information generated from participants and the number of interviews per participant amongst others to determine the sample size [18, 19].

Six out of Malawi's 28 district hospitals across three geographical regions (Northern, Central & Southern) of the country were purposely selected for the study using the [10, 14, 20] Maternal Health Annual Report of the Ministry of Health [20]. All the six selected district hospitals participated in the facility based maternal death reviews. The 2012 District Health Survey report [21] was used to purposely identify each of the three urban and rural district hospitals that met the criteria. The selection was done with the view of ensuring maximum variation in the contextual working environment of participants across the three regions [18]. All midwives working in maternity units with a minimum of two years' work experience (antenatal, labour and delivery and postnatal), participating in the implementation of facility-based MDR for at least one year prior to data collection and working continuously in the maternity units for the specified period met the inclusion criteria to participate in the study. Twelve senior Registered Nurse Midwives in managerial positions, two from each of the six selected district hospitals participated in individual face-to-face in-depth interviews describing views, experiences and perceptions of midwives on the challenges they face in their contributions to the implementation of maternal death review conducted at their facilities. Twenty-eight Registered Nurse Midwives and 16 Nurse Midwife Technicians participated in five focus group discussions while two Registered Nurse Midwives & three Nurse Midwife Technicians described the challenges they face, possible solutions and facilitators to enhance their contribution to the implementation of FBMDR. Triangulating the methods helped to enrich the collected data by complementing the participants' views and their opinions.

Recruitment Of Study Participants

All nurse midwives participating in the FBMDR were eligible for the study. As of 2008, there were 2932 Nurse Midwives working in maternal units (Antenatal, labour & delivery, postnatal and reproductive service departments providing family planning, breast and cervical cancer screening) of the health facilities in Malawi [22].

A total of 40 midwives met the inclusion criteria and were finally recruited for the study. The midwifery workforce in Malawi is composed of two main cadres: the Registered Nurse Midwife who undergoes four years of post-secondary education, including an optional year of midwifery and exit with a bachelor's degree in Nursing and a university certificate in midwifery, while Nurse Midwife Technicians are trained at college diploma for a period of three years, which includes two years of general nursing and one year of midwifery training [22]. In the hospital settings Nurse Midwife Technicians practice under Registered Nurse Midwives but in health centres the former are often the only nursing midwifery staff available performing all available medical care including maternal and health care services alongside Medical Assistants who are also prepared at diploma level from medical schools within the country and have minimal midwifery knowledge and skills [23].

Data Collection Tools

The researcher developed interview guides for individual face-to-face in-depth interviews and focus group discussions as tools to guide data collection. The tools were pilot tested to develop the lines of questioning when probing, to ensure the researcher's familiarity with its use and to identify and exclude any ambiguities before initiating data collection. The pilot testing consisted of one focus group interview with five nurse-midwife technicians and three individual face-to-face in-depth interviews with registered nurse-midwives at one hospital, which was not part of the six selected district hospitals for the study. The pilot test outcome was satisfactory. The individual face-to-face in-depth interview guide contained questions that explored and described the challenges faced by midwives in the implementation of FBMDR in selected district hospitals. The questions were open-ended to allow the midwives to describe their in-depth views, opinions, experiences, and feelings on the phenomenon under study and allowed participants to explore and discuss their experiences, views, opinions and recommendations about possible solutions and facilitators to midwives' contribution to the implementation of maternal death reviews in district hospitals in the country during focus group discussions.

Data Collection Process

The researcher conducted both the individual face-to-face interviews and FGDs in English as per participants' preference. Consent was granted by participants to have the interviews and FGDs audio-recorded. Consent forms were signed by those who volunteered to participate in the study after they were informed of the details of the study. Participants were also informed of their freedom to discontinue with the study if they felt so at any point during the study. Comprehensive field notes were taken for non-verbal communication to supplement recorded data. Each interview and FGD were transcribed verbatim within

72 hours after data collection with the view to go back to participants for clarity or for any missing information, where necessary, while the information was still fresh in their minds.

Data Management And Analysis

All the generated data was manually analysed using thematic content analysis procedure. Five steps described by [18, 19] were used, which include: transcribing data, developing a category scheme, coding of data, constructing and defining the themes, and presenting themes. Data was then coded and categories were created from coded data. Patterns were identified which were used to create subthemes. Finally, similar sub-themes were grouped together keeping each with corresponding significant statements. The main themes were then constructed and defined after collapsing the subthemes. Deductive reasoning was used to search for units of information with similar content or meanings as well as the search of differences between content of the main themes [24]. The themes were later scrutinised to determine if they formed a coherent pattern and were labeled based on the content in which they emerged as well as the FBMDR framework. Lastly, each theme was presented with a brief narrative description supported by the related sub-theme extracts from the data of which each was given a code consisting of an alphabetical letter and a numerical number for identification. The individual face-to-face interviews were coded with the letters “ID,” while focus group discussions were coded with the letters “FGD" followed by numerical numbers. A personal laptop was used to capture the above transcripts into Microsoft Excel spreadsheet.

Ethical Approval

Approval to conduct the study was obtained from the Health Studies Research Ethics Committee of the University of South Africa and the National Health Sciences Research Committee of Malawi. Eligible participants were assured of confidentiality and their participation was voluntary and that they were free to discontinue the interview without any repercussion at any time. All eligible, willing and consenting participants signed the informed consent forms to participate in the study. Permission was also obtained from District Health Officers and the Matrons from selected district hospitals for data collection.

Results

Social demographic characteristics of study participants.

Table 1: Social demographic characteristics of study participants.

Characteristics	Group	Frequency (N=40)	Percentage (%)
Gender	Male	8	20%
	Female	32	80%
Age	20-30	25	62%
	31- 44	7	17.5%
	45 +	3	7.5%
Educational Level/Cadre	Bachelor's Degree	24	60%
	Diploma in Nurse	16	40%
Marital Status	Married	36	90%
	Single	4	10%
Work Experience	≤5 years	12	30%
	5-10 years	18	45%
	11+ years	10	25%
Participants Location	Northern	12	30%
	Central	15	37.5%
	Southern	13	32.5
Sites	Urban	4	66.6%
	Rural	2	33.3%
Nature of Facility	Private	0	0%
	Government	6	100%
Number of participants	Interview	12	30%
	FGD	28	70%

As shown in Table 1 above, a total of 40 participants were involved in the study of which the majority were females, from government health facility mostly from urban.

Challenges faced by Midwives

The four major challenges; i) Knowledge and skill gaps, ii) Leadership and Accountability gap iii) Institutional political will and iv) Inconsistencies in the conduct of FBMDR and the possible solutions which include knowledge and skill updates, supportive supervision, and effective leadership, effective and

efficient interdisciplinary working spirit, availability of material and human resources will be discussed in the section below:

Knowledge and skills gaps

Inadequate knowledge and skills among the midwives were captured in this study. A majority of Nurse Midwife Technicians raised concerns on how knowledge and skills gaps limited them in performing to their expected capacity to effectively contribute to the implementation of FBMDRs. They expressed that they were not competent in data collection, data analysis, formulating diagnosis and action plans as well as the implementation of recommendations, monitoring and evaluating outcomes. Senior Registered Nurse Midwives, who participated in face-to-face interviews agreed that this knowledge and skill gaps for Nurse Midwife Technicians were hindering their effectiveness at all stages of the MDR process and needed urgent redress to improve their practice towards delivery of quality maternal healthcare and contribute to the reduction in maternal death. Factors identified as contributing to the knowledge and skills gap were identified: Lack of adequate and in-depth orientation and training on how to conduct MDR to midwives before they could be allocated to maternal health care units where they are expected to participate effectively in the review process and make a difference in maternal outcomes. This also deprived them of their opportunity to be updated on current best practices to continuously develop their profession. It was also revealed that lack of mentors and supervision by senior staff and those with adequate experience affected their ability to master necessary skills required for the reviews. Lack of access to current evidence-based information was also reported by participants as a barrier in the implementation of recommendations which led them to continue with old practices with outdated scientific bases. Both Registered Nurse Midwives and Nurse Midwife Technicians, expressed that MDR was an on the job learning initiative beyond their academic preparation and scope of practice, as such they needed adequate preparation. These challenges undermined the midwives' competencies and confidence in contributing to the implementation of FBMDR at each stage of the review process. They expressed that their contribution to MDRs was negligible to make a positive impact on contributing to improving the quality of maternal health care services and reduction in maternal death.

"*You know (pose), the lack of knowledge among midwives regarding maternal death is a serious problem affecting our contributions to MDR. I have noticed that some midwives serving in the committee, mostly the low cadres, don't even know when a death of a woman can be classified as maternal death or not. If you don't know what constitutes a maternal death, you will not even know what type of information you need to collect to confirm maternal death?" (**ID** 2).*

In addition, lack of knowledge was evidenced by substandard information obtained during data collection which revealed: missing important information, incomplete, inaccurate, illegible, or incorrect capture of patients' records documentation, which hindered MDR reviewers to fully understand circumstances leading to a woman's death.

"The challenge in using the midwives' records is mainly poor record of data. It starts with illegible handwriting, omissions of patient personal information, information recorded without dates, time and signature; too scanty information about patients' health passports or poorly recorded on the labour chart or no records at all. Even the entry in hospital records like registers of admissions, antenatal records, death certificates, you find that there is inadequate information or nothing documented." ***(ID 3).***

Furthermore, both Registered Nurse Midwives and Nurse Midwife Technicians pointed to the need for bridging their knowledge and skills gaps. The Registered Nurse Midwives and Nurse Midwife Technicians viewed adequate orientation and training in FBMDR as an enhancer for their effective participation and contribution to the success of the reviews. The Registered Nurse Midwives explained that due to the ever-changing needs of clients, evolving and dynamic midwifery practice, new technologies, advances in research activities and demand for professional growth, they require sustainable ongoing needs. Evidence-based in-service training, workshops, Continuous Professional Development (CPD), refresher courses, upgrading qualifications and exposure to current and best practice are critical for midwives to remain relevant and responsive to the current needs in the healthcare system.

"With the dynamic nature of our profession and the ever-changing health problems experienced by women, it is impossible for us (referring to midwives) to provide quality midwifery care that responds to those needs without continuously updating our knowledge. Oh yes, we need to keep abreast of new trends in midwifery as skilled birth attendants, we are expected to have adequate knowledge and skills and competencies to provide midwifery care to both low and high-risk conditions' ***(FGD2).***

The need to continuously update knowledge to remain relevant and able to respond effectively to complex maternal health problems was best illustrated with the extract below.

"As skilled birth attendants, we are expected to have adequate knowledge and skills and competencies to provide midwifery care to both low and high-risk conditions. We cannot rely only on the knowledge acquired during our formal training because nursing is always changing. We need to continuously update our knowledge to remain relevant" ***(FGD6).***

The midwives also narrated that sustained knowledge updates have great potential to effectively improve their confidence, critical thinking abilities, analytical and problem-solving skills necessary for making sound, autonomous, ethical, professional and clinical decisions to advance their contribution in the reviews and improve the quality of midwifery practices.

Leadership Gap and Lack of Accountability

Midwives viewed the MDR process as a great learning opportunity for them; however, they expressed their demoralization and demotivation to participate in the reviews because of the culture of blame from senior midwifery staff and other members of the multidisciplinary team, including the District Nursing

Officers, District Medical Officers and administrators, who belong to the District Health Management Team.

"I was excited to join the review committee because I personally viewed it as a good learning opportunity. But (pose), it is frustrating and demotivating to observe that these meetings have become opportunities for certain members of the health team to accuse individuals of being responsible for the death of the woman." ***(ID 7).***

Furthermore, blame shifting was rampant, for example, clinicians and managers would blame midwives for a maternal death. On the other hand, the midwives would blame their managers, clinicians and members from other departments at the facility that play a role in the management of the women under their care. The culture of accusing team members created an unhealthy and unconducive environment to deliver collaborated and quality healthcare as a team. This led to feelings of fear of punishment, unsafe and legal implications amongst Registered Nurse Midwives and Nurse Midwife Technicians. The midwives viewed that those in leadership lacked team building and collaborative skills, did not lead by example and lacked accountability:

"Clinicians most of the time blame midwives for being responsible for maternal complications and deaths. While the midwives place their blame on clinicians and other departments like laboratory, pharmacy, transport and switch board for not acting quickly, I think these differences can amicably be attended to through the unifying responses from the managers at the facility which is generally not forthcoming hence leading to divisions and lack of professional collaboration…" ***(ID 10).***

To address this challenge, midwives proposed improvement in communication skills and effective interpersonal relationship between members of the multidisciplinary team, effective and efficient leadership skills to creating a conducive atmosphere for members to collaborate and work better as a team and towards one goal of providing quality MD review process towards reducing maternal deaths and improving maternal health outcomes.

"Interpersonal skills are important for us in the implementation of maternal death review. It involves working in a multidisciplinary team. So, we need the ability to work within the team approach and good communication skills to mutually benefit from the inputs of the other members of the multidisciplinary team without undermining the efforts of the other as this increases the likelihood of the successful implementation of our interventions" ***(FGD 1).***

Effective interpersonal skills as determinants of quality midwifery care were reflected in the extract below:

"Working within a multidisciplinary team requires respect for each other, good communication and interaction with other members. Those skills will allow us to get the collaboration and support of other members in the implementation of the recommendations related to midwifery practice" ***(FGD3).***

Lack of supportive supervision from members of the District Health Management team was identified as one of the obstacles to midwives' effective contribution to the implementation of FBMDR in this study.

Regular supportive supervision by senior and more qualified professionals was associated with the professional development of junior staff, motivation and quality output. It was also revealed that regular supportive supervision was associated with compliance with the prescribed time and conduct of the reviews, including execution of the recommended actions, because the leaders become part of the process.

"For us to work effectively and efficiently we require regular and timely supportive supervision from our line managers" ***(FGD4)***

Lack of Institutional political will.

Inability to implement institutional policies to improve the quality of maternal healthcare due to a weak system and negative attitude was identified as a hindrance to the midwives' contribution to the implementation of FBMDR. They pointed out that the success and failure of the initiative is determined by the institutional political will, governance and skillful leadership to timeously mobilise needed financial, human and material resources. Midwives in the study identified lack of prioritization in addressing identified gaps from the reviews and honoring recommendations from senior staff management position and the facility as impeding midwives' successful contribution to the implementation of FBMDR. Leaders, including the District Nursing Officer, Medical Doctors and administrators were described as very slow to take action to address the challenges of inadequate human and material resources for effectively, efficiently and timely implementation of MDR recommended actions. The excuses given by these leaders included: lack of sufficient budgetary allocation and lack of prioritising midwives' needs. Midwives explained that maternal health issues should receive priority attention to reduce preventable or avoidable deaths with cost-effective measures which are constantly overlooked. They suggested the need for those in leadership positions to be proactive in supporting midwives in their contributions to the implementation of maternal death reviews.

We cannot say more, we need a midwifery leadership that is able to timeously facilitate mobilisation of resources to improve our contributions to the implementation of maternal death review. It is impossible for us to be effective and efficient if we don't have adequate material and human resources ***(ID2)"***

"Because of staff shortages, most of the time midwives, mostly those working at health centres, do not attend the review meetings. You know, most of our maternal death cases occur at the health centres, which in most cases function with only one staff member who cannot leave the centre to attend the review meetings. It makes it difficult for the committee to get comprehensive information about circumstances surrounding the MD" ***(ID4).***

"Most problems that we identified as avoidable causes of maternal deaths, are related to lack of material resources. For example, lack of drugs in pharmacy, lack of blood for transfusion, lack of equipment like blood pressures machines, thermometers which are cheap and can save the lives of women but when we ask administration to procure them for us, they tell us they do not have adequate finances" ***(ID 9).***

"*We cannot say more, we need a midwifery leadership that is able to mobilise resources to improve our contributions to the implementation of maternal death review. It is impossible for us to be effective if we don't have adequate material and human resources"* ***(FGD 5).***

"Management team must set their budget priorities right so that critical supplies and services for saving women lives and improving the quality of midwifery practice are at the heart of our management team members ***(FGD 2)"***

Lack of consistency in conducting FBMDR

The study unveiled practices in the conduct of FBMDR contrary to the stipulated guidelines and procedures. Maternal deaths in many facilities where the study took place are not consistently reviewed within 72 hours as per the prescribed timeframe. Poor attendance and frequent cancellation of the review meetings lead to poor quality MDR outcomes. It was also revealed that in many cases midwives from health centres do not turn up during the reviews to give their side of the story on how a maternal death occurred. This impacts on the authenticity of the collected data, hence incomplete perspectives on circumstances leading to women's deaths. The midwives viewed these inconsistencies as contributing negatively to the quality and outcome of the reviews, hence defeating the purpose of conducting reviews to learn from the previous avoidable circumstances that led to the women's deaths. These inconsistencies attributable to chronic staff shortages, lack of supportive supervision from senior staff members to those under their jurisdiction, increased workloads and lack of interest to attend the reviews, were highlighted during the study:

"We expected maternal death review to follow a systematic and rigorous process to generate best evidence to inform the diagnosis and recommendations. I am afraid to say that this is not the case in our facility. It does not motivate one to consider their recommendations… you know, the national reproductive health policy recommends that the MDR should be conducted within 72 hours after a maternal death has occurred. But the reality on the ground is that sometimes it takes weeks, months and in the worst cases up to a year before a maternal death case is reviewed. It is the same trend with our scheduled meetings, which are often postponed or canceled in short notice and sometimes without notice" ***(ID 4).***

"And at the same time, we eventually have a backlog of documents to be reviewed, which unnecessarily increases our workload during the MDR. The backlog pushes the committee to rush the reviews resulting in a shady job, missing out many important issues that could be useful in addressing the problems at hand" ***(ID 11).***

Regular supportive supervision from senior members of the management team was associated with the improvement in the effectiveness, efficiency and consistency in the performance of the activities related to the implementation of maternal death review at the facility. The midwives expected their seniors to offer needed support and act as role models in the performance of activities related to MDR. They viewed supportive leadership as being proactive in identifying both human and material resources required for

midwives to successfully contribute to the implementation of the FBMDR. Midwives also expected their leaders to offer valuable support by regularly participating in the reviews. They look up to the senior staff as role models, to coach and mentor them:

"Regular supportive supervision with senior personnel and district health management team will provide us the much-needed guidance on some issues that require their inputs. It will also motivate the committee to comply with the prescribed time frame for the reviews and facilitate the implementation of the plan of actions as problems will be identified quickly and the required resources will be made available timeously. This is also more important for health centres in remote areas, where you often have one nurse-midwife technician providing care" ***(FGD 2).***

"It is important that senior staff like the doctor and matron with experience in MDR to support us throughout the process. They will build capacity and help us with analytical skills on how to conduct the review and how to generate solutions. When senior staff attend the reviews, we see that the reviews are taken seriously and good ideas come out of it" ***(FGD 7).***

Midwives argued that regular supportive supervision is an indicator of the commitment of the leadership to the maternal death review process. This perceived commitment will be translated to the high attendance of the review meetings by members of the multidisciplinary team.

"We have noted high attendance of review meetings every time people are informed of the attendance of district management teams and other senior members of the multidisciplinary team. It also shows their commitment to the review process, and consequently high chances of getting the support required for the recommendations" ***(FGD4).***

Supportive supervision was reported to increase their confidence, critical thinking and problem-solving skills.

"When you are visited regularly by senior staff, you will have the opportunity to raise some of the burning issues directly with them and get guidance on the spot. It makes a big difference for staff motivation" ***(FGD2).***

Discussion

This study aimed at establishing the challenges faced by district-based midwives in the implementation of FBMDR in Malawi. Four major findings emerged: i) inadequate knowledge and skills gap, ii) leadership gap and lack of accountability, iii) lack of institutional political will and iv) lack of consistency in conducting FBMDR. This study has provided insight on challenges faced by midwives that impede them from effectively contributing to the implementation of maternal death review at district hospitals, which is an initiative aimed to improve the quality of maternal healthcare and reduce the currently high maternal mortality rates by qualitatively learning from previous experiences of maternal deaths, understanding causes and circumstances leading to mothers dying during pregnancy and possible solutions to prevent

or avoid its occurrence. The section below provides a discussion of these challenges and possible solutions:

Knowledge and Skills Gap

In this study, inadequate knowledge and skills gaps were found to have impeded the midwives' contributions in the implementation of FBMDR. Midwives reported that they were limited in effectively administering their duties of MDR at each of the five stages of the process that include: case identification, and notification, data collection, analysis of findings, implementation of recommended actions, follow up and evaluation [7]. Worrisomely, midwives who are frontline maternal healthcare providers do not have the necessary competencies to participate in the facility's maternal death reviews comprehensively and effectively. Skilled attendants are key in the fight against all preventable and avoidable maternal morbidity and mortalities. The presence of skilled professionals (doctor, midwife or nurse) during delivery is crucial in reducing maternal and neonatal deaths. In 2010 approximately 287,000 women died while pregnant or giving birth and 3.1million newborns died in the neonatal period [1]. Skilled care at every birth can serve the lives of women and newborns. [1] Midwives participate in safe motherhood initiation through provision of basic and comprehensive emergency obstetric and neonatal care, maternal neonatal and reproductive health services [25, 26].

[14], in a study in Kenya, Nigeria and India, it was found that lack of knowledge amongst facility staff involved in MDR reporting processes led to poor compliance, incomplete and inaccurate reporting and failure to dispatch case records to central committee leading to substandard review outcomes. It was also found that lack of knowledge and skills were a major barrier for midwives to successfully contribute to improving the quality of maternal health care at district hospitals. Lack of adequate preservice training and on-the-job continuous professional development was blamed for these challenges. [14] further found that inadequate pre-service training, lack of orientation on MDR, inadequate access to personal professional development, inability to use evidence-based knowledge to inform practice and inability to facilitate clinical learning. Skill-based training was found to be important for healthcare provider's, increased competency in skilled birth attendance, emergency obstetric and neonatal care [27]. Improved knowledge and skills of healthcare providers through education, coaching, mentorship and other professional development activities was consistently identified as an important facilitator of the implementation of guidelines by the professionals while lack of capacity building was identified as a major factor contributing to lack of knowledge and skills among midwives. [28] A study in Ashanti region in Ghana highlighted the need to continuously support on-the-job training capability building of midwives to enhance their contributions to the implementation of facility-based maternal death review, [8, 29, 30] found that regular evaluation of staff competencies (knowledge, attitude and skills) was associated with the smooth implementation of different activities of the facility-based maternal death review. [14,31], on the other hand noted that training on maternal death reviews in sub-Saharan African countries, including Malawi, was facing sustainability challenges after donor funded FBMDR trainings pulled out and governments could not sustain funding to scale up the trainings.

Leadership Gap and Lack of Accountability

The importance of leadership cannot be overemphasized in the healthcare delivery system. It is especially important for leaders and managers to lead with honesty and integrity. Creating a culture of accountability in healthcare is key and must start at a personal level. Leadership can positively or negatively affect the quality-of-service delivery at an institution, for example, the effects it might have on the stress or wellbeing of the staff which in turn is related to the poor quality of care produced. [32] this study identified ineffective leadership as one of the challenges hindering midwives' successful contribution to the implementation of FBMDR. The culture of blaming midwives' staff by those in leadership and administration at the facilities increased their stress levels and robbed them of their confidence and freedom to participate and contribute during review meetings. Insufficient competencies on the review process were cited as the main reason for this blame by their seniors. One would conclude that the lack of these competencies emanates from the lack of knowledge and skills intensified by the midwives themselves and senior staff at the facility. This apportioning of blame led to frustration, demotivation, sense of victimisation, stress and fear of legal repercussions, which consequently led to junior midwives resenting the reviews as a result. Based on these findings, the causes for the blame are that leadership did not take necessary steps to address the problem, which is viewed as lack of accountability for their roles. This, in a way, affected the quality of the MDR review process, which aims at improving maternal healthcare outcomes. [33] highlights the importance of the ability of audit and review team members to share diverse information, disclose errors and seek help and feedback from other teams and administration without fear of punitive measures by senior staff and leaders, given the abundance of evidence that medical errors are largely attributed to systems rather than individuals [14]. A study in Kenya reports that without an adequate legal framework and sensitization of health workers to the "blame free" principle, government plans to progress the MDR system may stall. In view of this, a legal framework is being enforced to ensure that information obtained and retrieved as part of the Maternal Death Surveillance and Response (MDSR) process is not used for litigation and to provide reassurance to health workers of its blame free principle of MDSR [14, 27]. According to [34], Malaysia is one of the countries that conduct MDR as a "no shame, no blame process, with the focus on learning from the maternal deaths to improve health systems and practices. In addition, in Malaysia, it was found that the term *"substandard care"* originally used in Malaysian MDR system, to categorise inappropriate or deficient care, was changed to "*remediable factors*" thereby projecting a positive image of caregivers and the care they provide. [14, 35], in their studies emphasised that many contributing factors to maternal death are beyond the control of an individual. A study in Tanzania, Malawi and Mozambique found that ongoing support is needed for health workers in the frontline services delivery to perform to their full potential and deliver quality care [36]. Adding that, when healthcare workers receive formal supervision, their participation and voice increase to a more open and inclusive environment which provides space for them to express ideas and be heard. The study further supports the need to strengthen the leadership and implementing framework.

Lack of consistency in conducting FBMDR

Nonadherence and compliance prescribed review procedures and standards were identified as some of the barriers faced by midwives in implementing FBMD. Lack of consistency on the timing and conduct of the reviews and low attendance beyond the minimum expected quorum for review meetings were due to staff shortages, lack of periodization of the MDR activities, and lack of commitment by leaders and staff since there were no incentives. Midwives reported demotivation including lost opportunities to timely learn from causes and circumstances surrounding maternal deaths. The reviews, and postponement of the reviews increased the workload due to the backlog of unreviewed cases of maternal death and generally poor quality of recommendations generated from the reviews because of rushed reviews hence defeating the intended purpose of saving mothers from preventable deaths. Timeous reviews are crucial in improving maternal health care and reducing maternal deaths. Unless there is improvement in individual capabilities, leadership, support structure and resources, midwives will continue to be ineffective and inefficient in their timely contribution to the implementation of the reviews. [8,30,37], proposed that activities of FBMDR should be guided by protocols set by the Ministry of Health based on the World Health Organisation guidelines.

The multidisciplinary FBMDR committees are expected to function according to the set standards, protocol and the sense of responsibility of its members [12,38]. However, disappointingly, [14], found that in most countries where the MDR are being introduced and implemented, senior staff such as doctors and specialists were absent from the reviews, and as a result were conducted mostly by junior staff. In addition, members of the District Health Management Team were constantly unavailable for the reviews. According to [14], MDR is considered a professional duty such that, in countries where FBMDRs are well established, obstetricians, medical officers, anaesthetist, midwives and other personnel are committed to participate in the reviews without extra pay but as part of the professional development, in the intensive process of assessing the cause of death, preventable conditions and contributing factors. [14] also found that lack of support from managers and insufficient resources were prevalent in many countries and recommended the need for central administrative support for the reviews from national level as done in Malaysia, Republic of South Africa and United Kingdom where State Directors attend some of the reviews in their countries to ensure sufficient resource allocation for the success of the initiative [14]. Similarly, the availability of support structures and policies, trainings and resources (financial human and materials) were reported as important in ensuring the smooth implementation of the different activities of the facility-based maternal review [39]. Good leadership, coordination of training of all key staff, staff members' positive attitude towards the implementation of the review, and the availability of external support are viewed as major facilitators of the implementation of the reviews [38]. Administrative support, positive attitudes, active nurse and physician champions were also found to be facilitators of the successful implementation of all the activities of the project, while negative attitudes, lack of support from managers, and lack of champions were identified as barriers to the implementation of the activities of the project, leading to demotivation of staff members, [40]. For the MDR cycle to work efficiently as a continuous quality improvement process to prevent future maternal deaths, certain inputs and processes

need to be in place at facility, district and national level [4]. In Malawi the MDR are guided by set procedures, standards and guidelines by the Ministry of Health but committed leadership is required to ensure these are abided by if the review outcomes will be effective.

Conclusion

This study has illuminated the challenges faced by midwives as they participate in the implementation of the FBMDR and its related activities. The study findings included i) inadequate knowledge and skills gap, ii) the blame game, iii) lack of prioritization in addressing gaps and honoring recommendations and iv) lack of consistency in conducting FBMDR at all levels of the healthcare system as some of the main barriers for midwives to successfully participate in the reviews. The study has also highlighted solutions to address the identified challenges. These findings provided a contextual basis to inform the design of support strategies for practice development of district-based midwives in the context of the healthcare system in Malawi. This framework will emphasise on the strengthening of the healthcare system with specific focus on the government responsibility to address the challenges related to service delivery, health workforce, health information systems, access to essential health medicines financing, leadership and governance at all levels of the healthcare delivery system (policy, program planning and provider level) with reference to WHO health system building blocks. Addressing the challenges faced by midwives calls for consented efforts and commitment from all stakeholders including government, Public and Private partnership, civil society, Non-Government Organisations (NGOs) local midwifery associations and regulatory bodies, bilateral organisations and the community. The implementation process could be undertaken through scaling up sound training and policies that would redress the blame game, leadership, and strengthen an ongoing monitoring and evaluation of FBMDR at each stage of the review process.

Limitations

Due to the shortage of midwives in the country it was difficult to get enough participants. Some district hospitals could not be accessible due to geographical position. All these limitations made it difficult to achieve the sample size of participants where data could be collected to generalise the findings across the country. To overcome these limitations, the two categories of midwives were included in the study to maximise data and get diverse views. Triangulation of data collecting methods was also regarded as measures to litigate those limitations.

Abbreviations

CPD: Continuous Professional Development; FBMDR: Facility Based Maternal Death Review; LMIC: Low Middle Income Countries; MDR: Maternal Death Review; MDSR: Maternal death Surveillance and Response; MDG Millennium Development Goals; RNM: NGO: Non-Government Organisation (NGO); SDG: Sustainable Development Goals; FGD: Focus Group Discussion; WHO: World Health Organisation.

Declarations

Ethical Approval and consent to participate

Ethical clearance was approved by the ethics committee of The University of Africa # HSHDC/295/2013. Permission to conduct the study was granted by the Ministry of Health Malawi NHSRC#1292 through the District Health Office. Consent forms were signed by all participants. All methods were carried out in accordance with the relevant guidelines and regulations of the approving institutions. Informed consent was obtained from all participants.

Consent for Publication

Not applicable.

Availability of data and materials

All the data sets used during the study are available in the manuscript.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

Dr. Mercy Dokiso Chirwa, conceptualized the study, collected and analysed data and wrote the first draft of the manuscript. Dr. Juliet Nyasulu, Professor Lebitsi Modiba, & Professor Makombo Ganga-Limando reviewed the paper for critical intellectual content. All authors approved the final version of the manuscript.

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